AUTODOME 5000 Analog PTZ Camera

VEZ-5000

BOSCH

en Operations Manual

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1 Safety

1.1 About this Manual

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was complete and correct at the time of printing. Because of the ongoing development of products, the content of the manual may change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults, incompleteness, or discrepancies between the manual and the product described.

1.2 Conventions in this Manual

In this manual, the following symbols and notations are used to draw attention to special situations:

Danger!
This symbol indicates an imminently hazardous situation such as “Dangerous Voltage” inside the product. If not avoided, this will result in an electrical shock, serious bodily injury, or death.

Warning!
Indicates a potentially hazardous situation. If not avoided, this could result in serious bodily injury or death.

Caution!
Medium Risk
Indicates a potentially hazardous situation. If not avoided, this may result in minor or moderate injury. Alerts the user to important instructions accompanying the unit.

Caution!
Indicates a potentially hazardous situation. If not avoided, this may result in property damage or risk of damage to the unit.

Notice!
This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

1.3 Legal Information

Copyright
This manual is the intellectual property of Bosch Security Systems, Inc. and is protected by copyright. All rights reserved.
Trademarks
All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

1.4 Important Safety Instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning -** Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a dry cloth for cleaning is sufficient, but a moist fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.
2. **Heat Sources -** Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. **Ventilation -** Any openings in the unit enclosure are provided for ventilation to prevent overheating and ensure reliable operation. Do not block or cover these openings. Do not place the unit in an enclosure unless proper ventilation is provided, or the manufacturer's instructions have been adhered to.
4. **Object and liquid entry -** Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the unit. Do not place objects filled with liquids, such as vases or cups, on the unit.
5. **Lightning -** For added protection during a lightning storm, or when leaving this unit unattended and unused for long periods, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit from lightning and power line surges.
6. **Controls adjustment -** Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit. Use of controls or adjustments, or performance of procedures other than those specified, may result in hazardous radiation exposure.
7. **Overloading -** Do not overload outlets and extension cords. This can cause fire or electrical shock.
8. **Power cord and plug protection -** Protect the plug and power cord from foot traffic, being pinched by items placed upon or against them at electrical outlets, and its exit from the unit. For units intended to operate with 230 VAC, 50 Hz, the input and output power cord must comply with the latest versions of *IEC Publication 227* or *IEC Publication 245*.
9. **Power disconnect -** Units have power supplied to the unit whenever the power cord is inserted into the power source, or when High Power-over-Ethernet (High PoE) power is provided over the Ethernet CAT 5E/6 cable. The unit is operational only when the ON/OFF switch is in the ON position. The power cord is the main power disconnect device for switching off the voltage for all units. When High PoE or PoE+ (820.3at) is used to power the unit, the power is provided over the Ethernet cable, which is then the main power disconnect device for switching off the voltage for all units.
10. **Power sources -** Operate the unit only from the type of power source indicated on the label. Before proceeding, be sure to disconnect the power from the cable to be installed into the unit.
    For battery powered units, refer to the operating instructions.
    For external power supplied units, use only the recommended or approved power supplies.
    For limited power source units, this power source must comply with *EN60950*.
    Substitutions may damage the unit or cause fire or shock.
    For 24 VAC units, voltage applied to the unit's power input should not exceed ±10%, or 28 VAC. User-supplied wiring must comply with local electrical codes (Class 2 power levels). Do not ground the supply at the terminals or at the unit's power supply terminals. If unsure of the type of power supply to use, contact your dealer or local power company.
11. **Servicing -** Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

12. **Damage requiring service -** Unplug the unit from the main AC power source and refer servicing to qualified service personnel when any damage to the equipment has occurred, such as:
    the power supply cord or plug is damaged;
    exposure to moisture, water, and/or inclement weather (rain, snow, etc.);
    liquid has been spilled in or on the equipment;
    an object has fallen into the unit;
    unit has been dropped or the unit cabinet is damaged;
    unit exhibits a distinct change in performance;
    unit does not operate normally when the user correctly follows the operating instructions.
13. **Replacement parts -** Be sure the service technician uses replacement parts specified by the manufacturer, or that have the same characteristics as the original parts. Unauthorized substitutions may cause fire, electrical shock, or other hazards.
14. **Safety check -** Safety checks should be performed upon completion of service or repairs to the unit to ensure proper operating condition.
15. **Installation -** Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
16. **Attachments, changes or modifications -** Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

1.5 Important Notices

Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit. When a cart is used, use caution and care when moving the cart/apparatus combination to avoid injury from tip-over. Quick stops, excessive force, or uneven surfaces may cause the cart/unit combination to overturn. Mount the unit per the manufacturer's instructions.

All-pole power switch - Incorporate an all-pole power switch, with a contact separation of at least 3 mm in each pole, into the electrical installation of the building. If you must open the housing for servicing and/or other activities, use this all-pole switch as the main disconnect device for switching off the voltage to the unit.

Camera grounding - For mounting the camera in potentially damp environments, ensure to ground the system using the ground connection of the power supply connector.

Camera lens - An assembled camera lens in the outdoor housing must comply and be tested in accordance with *UL/IEC60950*. Any output or signal lines from the camera must be SELV or Limited Power Source. For safety reasons, the environmental specification of the camera lens assembly must be within the environmental specification.

Camera signal - Protect the cable with a primary protector if the camera signal is beyond 140 feet, in accordance with *NEC800 (CEC Section 60)*.

Coax grounding:

- Ground the cable system if connecting an outside cable system to the unit.
- Connect outdoor equipment to the unit's inputs only after this unit has had its grounding plug connected to a grounded outlet or its ground terminal is properly connected to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding plug or grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.

U.S.A. models only - *Section 810* of the *National Electrical Code, ANSI/NFPA No.70*, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Notice!

This device is intended for use in public areas only.

U.S. federal law strictly prohibits surreptitious recording of oral communications.

Cold Start-ups - If camera is powered up in extremely cold temperature (for example, -40°C), please allow 30 minutes warm-up after powering camera prior to operation. In some cases, camera may require a soft reset or a power cycle before usable video is available.

Environmental statement - Bosch has a strong commitment towards the environment. This unit has been designed to respect the environment as much as possible.

Electrostatic-sensitive device - Use proper CMOS/MOS-FET handling precautions to avoid electrostatic discharge. NOTE: Wear required grounded wrist straps and observe proper ESD safety precautions when handling the electrostatic-sensitive printed circuit boards.

Fuse rating - For security protection of the device, the branch circuit protection must be secured with a maximum fuse rating in accordance with *NEC800 (CEC Section 60)*.

Grounding and polarization - This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other blade). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, contact a locally certified electrician to replace the obsolete outlet. Do not defeat the safety purpose of the polarized plug.

Alternately, this unit may be equipped with a 3-pole grounding plug (a plug with a third pin for earth grounding). This safety feature allows the plug to fit into a grounded power outlet only. If unable to insert the plug into the outlet, contact a locally certified electrician to replace the obsolete outlet. Do not defeat the safety purpose of the grounding plug.

Moving - Disconnect the power before moving the unit. Move the unit with care. Excessive force or shock may damage the unit.

Outdoor signals - The installation for outdoor signals, especially regarding clearance from power and lightning conductors and transient protection, must be in accordance with *NEC725* and *NEC800 (CEC Rule 16-224* and *CEC Section 60)*.

Permanently connected equipment - Incorporate a readily-accessible disconnect device in the building installation wiring.

Power lines - Do not locate the camera near overhead power lines, power circuits, or electrical lights, nor where it may contact such power lines, circuits, or lights.

Video loss - Video loss is inherent to digital video recording; therefore, Bosch Security Systems cannot be held liable for any damage that results from missing video information. To minimize the risk of lost digital information, Bosch Security Systems recommends multiple, redundant recording systems, and a procedure to back up all analog and digital information.

1.6 FCC and ICES Compliance (Class A)

FCC ET ICES INFORMATION (commercial applications)
(U.S.A. and Canadian Models Only, CLASS A)

Notice!
This is a **class A** product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

This device complies with *part 15* of the *FCC Rules*. Operation is subject to the following conditions:
– this device may not cause harmful interference, and
– this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a **commercial** environment. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his expense.
Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.
The user may find the following booklet, prepared by the Federal Communications Commission, helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

INFORMATIONS FCC ET ICES (applications commerciales)
(modèles utilisés aux États-Unis et au Canada uniquement, CLASSE A)

Notice!
Ce produit est un appareil de **Classe A**. Son utilisation dans une zone résidentielle risque de provoquer des interférences. Le cas échéant, l’utilisateur devra prendre les mesures nécessaires pour y remédier.

Ce produit est conforme aux normes FCC partie 15. la mise en service est soumises aux deux conditions suivantes:
– cet appareil ne peut pas provoquer d'interférence nuisible et
– cet appareil doit pouvoir tolérer toutes les interférences auxquelles il est soumit, y compris les interférences qui pourraient influer sur son bon fonctionnement.

Suite à différents tests, cet appareil s’est révélé conforme aux exigences imposées aux appareils numériques de Classe A en vertu de la section 15 du règlement de la Commission fédérale des communications des États-Unis (FCC). Ces contraintes sont destinées à fournir une protection raisonnable contre les interférences nuisibles quand l'appareil est utilisé dans une installation commerciale. Cette appareil génère, utilise et émet de l'energie de fréquence radio, et peut, en cas d'installation ou d'utilisation non conforme aux instructions, générer des

interférences nuisibles aux communications radio. L'utilisation de ce produit dans une zone résidentielle peut provoquer des interférences nuisibles. Le cas échéant, l'utilisateur devra remédier à ces interférences à ses propres frais.
Au besoin, l'utilisateur consultera son revendeur ou un technicien qualifié en radio/télévision, qui procédera à une opération corrective. La brochure suivante, publiée par la Commission fédérale des communications (FCC), peut s'avérer utile : « How to Identify and Resolve Radio-TV Interference Problems » (Comment identifier et résoudre les problèmes d'interférences de radio et de télévision). Cette brochure est disponible auprès du U.S. Government Printing Office, Washington, DC 20402, États-Unis, sous la référence n° 004-000-00345-4.

2 Description

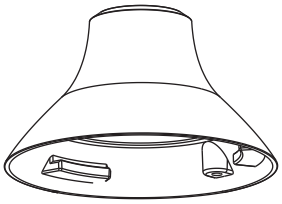
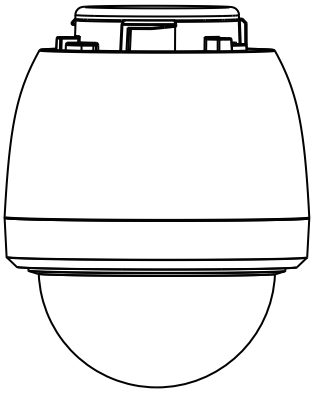
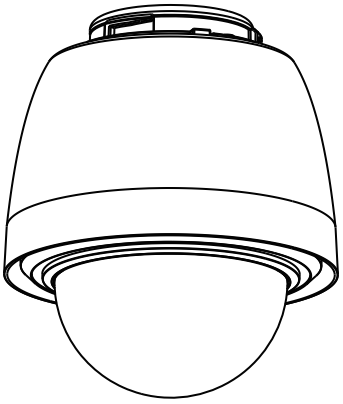
The AUTODOME 5000 Analog PTZ Dome Camera delivers up to 432x zoom ratio to capture clear image in the distance. Continuous Auto Focus, Back Light, Auto Exposure and Auto SensUp Max functions are provided for clear and high quality image. Night Mode ensures 24 hours operation, while Privacy Masking is specially designed to avoid any intrusive monitoring at specific region; all of the salient functions can be incorporated to meet your needs. The Home function allows users to specify a preset position as the “home position” or choose a preferred action as the “Home function” (Preset Tour / Auto Pan / Tour). If the Home function is enabled, the camera can return to the preset home position or function when the camera has been idled for a user-defined period of time. Additionally, the unique Schedule function enables users to program a preset point or function (Preset Tour / Auto Pan / Tour) for the selected actions to be automatically initiated at specified times.
The camera provides variable pan/tilt speeds ranging from a fast patrol of 360° per second to a slow ramble of 5° per second with 0.225° pan/tilt accuracy for fast and accurate tracking ability. The 360° endless rotation and 0° to 90° tilt travel help to track the object passing directly beneath the camera. Maximum 99 preset points can be programmed for precise location of target areas, and users can also define Preset Tour, Auto Pan and Tour lines for the camera to operate automatically. In addition, a RS-485 communication port is available for remote control.
The camera provides 4 alarm inputs and 2 alarm relay outputs, and the smart alarm management mechanism can be programmed through the OSD setup menu. A chosen action (Preset / Preset Tour / Auto Pan / Tour) can be activated when an alarm is triggered.
The built-in protocols include OSRD and Pelco P/D, which allow the camera to be integrated with surveillance systems of other suppliers.

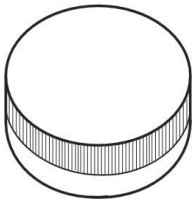
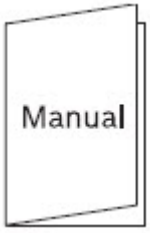
Features

- 432X Zoom (36X Zoom, 12X Digital)
- 960H Double Scan CCD sensor
- 720TVL Sensor resolution
- Wide Dynamic Range (WDR)
- True Day & Night (IR Cut Filter)
- Digital Noise Reduction
- 360° Endless Pan Range
- 0° to 90° Tilt Angle
- Manual speed 0.5° to 90° /s
- 99 Preset Positions / 5° to 360° per second Pre-position Speed
- 8 Tour
- 4 Autopan
- 8 Preset Tour
- Up to 20 Privacy Masking zone
- Image Enhancement / AGC Control
- 4 Alarm Inputs, 2 Alarm Outputs (N.C. / N.O./ OFF)
- Multi-language On-Screen Display
- Bosch OSRD, Pelco P/D Protocol
- Compatible external devices (LTC-5136,MIC-BP3, UPA-2450-50 / UPA-2450-60)
- Programmable PTZ Speed: Proportional to Zoom ratio, changeable preset speed

3 Unpacking

3.1 Parts List

Quanity	Graphic	Description
1		Mounting Adapter
1		Dome Camera Body without Sunshield[1]
1		Dome Camera Body with Sunshield[1]
1		M5x8L security screw for mounting adapter
1		T20 Security Torx wrench for M5x8L security screw

Quanity	Graphic	Description
1		T10 Security Torx wrench for dome bubble
1		Lubricant
1		User Manual

Notice!

1. Your package contains one Dome Camera Body, depending if you purchased an indoor (without sunshield) or an outdoor (with sunshield) camera.

4 Installation

Follow the instructions below to complete cable connections of the AUTODOME 5000 camera. Connect the camera to other devices as shown in the diagram to complete a video surveillance solution.

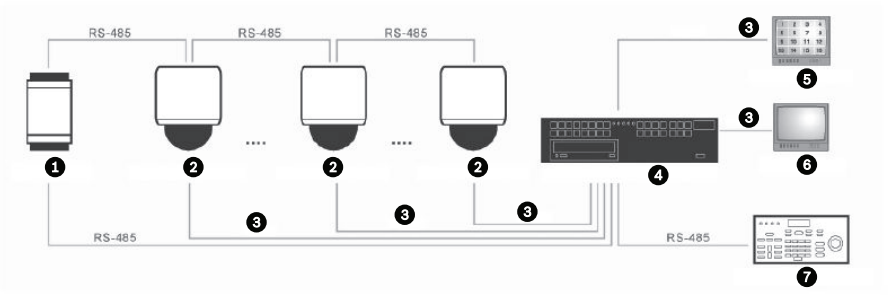


Figure 4.1: System Configuration

1	Repeater
2	AUTODOME 5000 camera
3	Video cable
4	Switch/Quad/Mux/DVR
5	Main monitor
6	Call monitor
7	Control keyboard

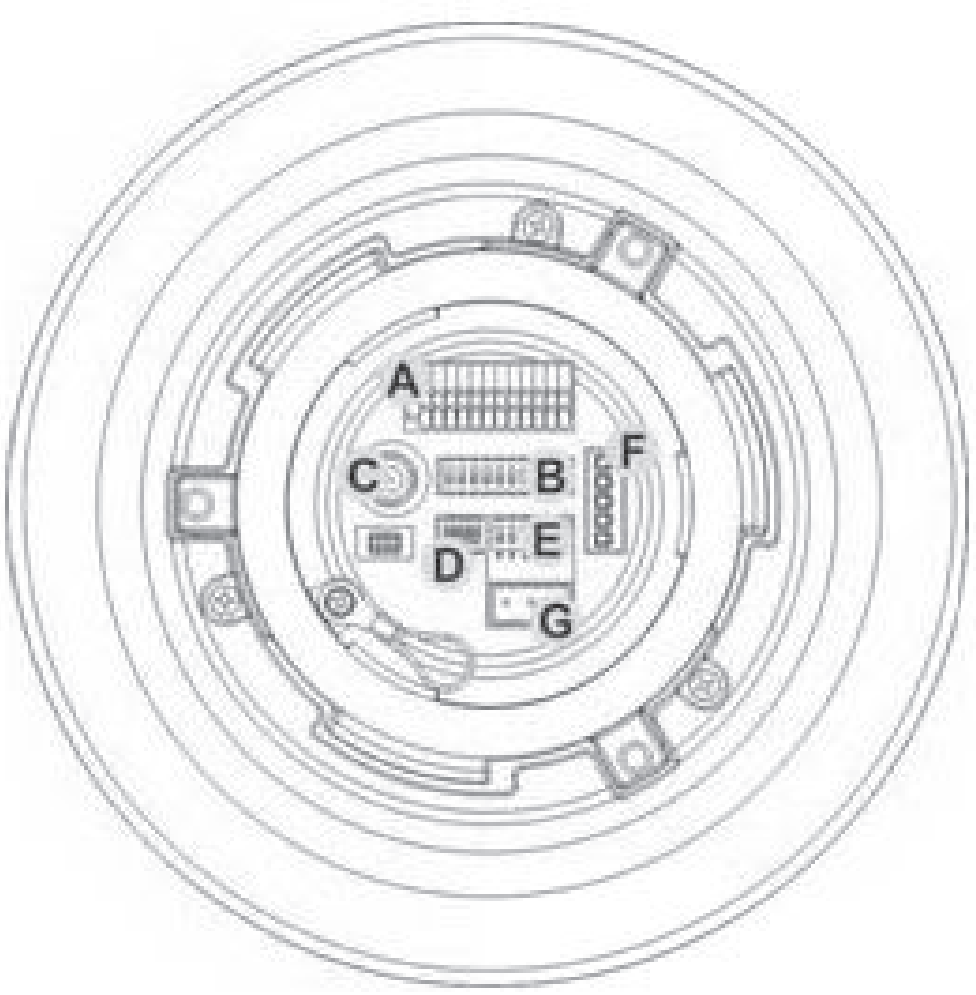
Notice!

To extend the network distance up to 1.2 km (4000 feet) and to protect the connected devices, it is highly recommended to place a repeater at the mid-point. However, a repeater may be needed in the network distance less than 1.2 km if the used cables are not the CAT 5, 24-gauge cables. Refer to section RS-485. For detailed information about the repeater, refer to its manual.

5 Connection

5.1 Switches/Connectors

Configuring the camera's ID and communication protocol is required before connecting the camera to other devices. The switches used for configuring these settings are located on the camera's back plate.
Refer to the diagram and table below for positions and definition of the switches / connectors.

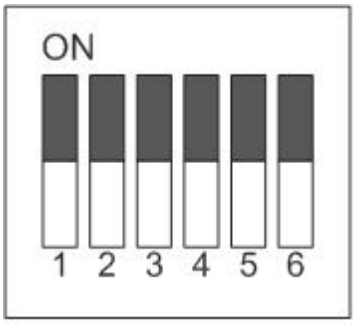


Letter	Description
A	Alarm I/O
B	Camera ID setup dip switch
C	BNC video output
D	Communication switch
E	Camera control protocol switcher
F	RS-485 connector
G	Power connector

5.2 Communication Switch Setting

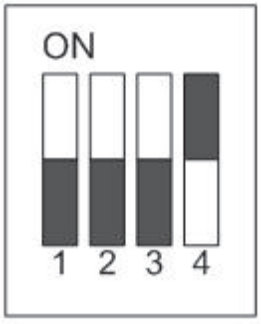
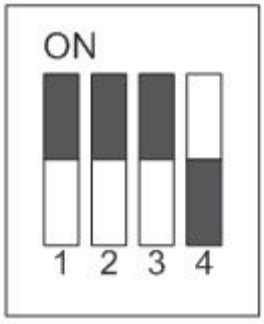
Communication Switch

The camera's communication switches are specified in the table below.

Communication Switch	Switches	Description
	SW1	RS-485 Setting
	SW2	
	SW3	
	SW4	
	SW5	Reserved
	SW6	Reserved

RS-485 Setting

The camera uses an RS-485 interface to communicate with the control device. For this reason, the RS-485 setup of the camera and the control device must be the same. The default RS-485 setting is half-duplex. Do not change the default setting without any support from qualified specialists or suppliers.

RS-485 Setting	
Half-Duplex	**Full-Duplex**
	

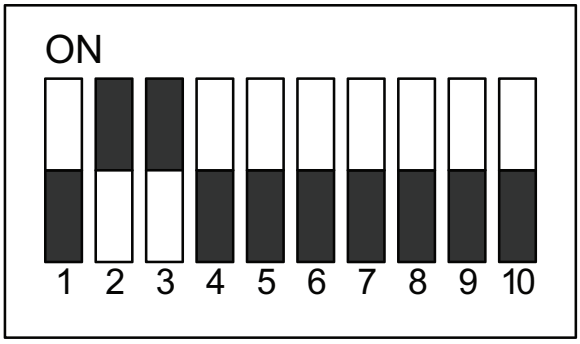
5.3 ID Setting

If there is more than one camera in the same network, you must assign an ID number to each camera. Access the OSD menu and go to <INSTALLER MENU> → <CAMERA ID SETTING> → <ID SETTING> to assign the camera's ID number. Refer to the section Camera Setting for detail setting instructions.

Notice!

No two cameras in the same network should be given the same ID, or communication conflict may occur.

For users who wish to set up the camera ID via the dip switch at the camera's back plate, first choose <HW> as the setting type under the <ID SETTING> menu. Then the camera's ID can be setup using the 10-bit ID dip switch. If the camera's ID number is 6, for instance, the ID switch SW 2 and SW 3 should be set to "ON" and the rest should be set to "OFF" as shown below.



For switch configuration details, refer to *Appendices, page 69*.

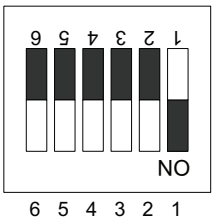
Notice!
If you need to setup the camera ID via the dip switch at the camera's back plate, the setting type **MUST** be changed to <HW>. Otherwise the dip switch **WILL NOT** be enabled.

5.4 Camera Control Protocol Setting

Define the camera control protocol according to the devices of the surveillance system. Generally, use one protocol even the devices are provided from different manufacturers. Refer to the table below for all supported protocols with their matching switch numbers and baud rate. Choose an appropriate protocol for the camera.

Switch Number	Protocol	Baud Rate
00	Pelco D	2400
01	Pelco D	4800
02	Pelco D	9600
04	Pelco P	1200
05	Pelco P	4800
06	Pelco D	9600
10	Bosch OSRD	9600

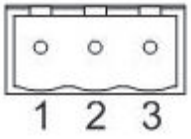
Use the 6-bit dip switch (Camera Control Protocol Switch) to set the camera's control protocol and its baud rate. If protocol "Pelco D" is selected, which is switch no. 01 and baud rate 4800, for instance, set the SW-1 to "ON" and the rest to "OFF" as shown below.



For more switch configurations, refer to *Appendices, page 69*.

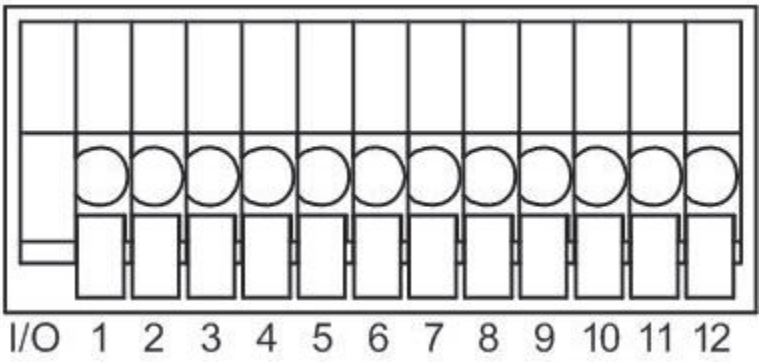
5.5 Power Connector

Before connecting the power wires, refer to the illustrations below for definition of the power connector. Be sure to connect to the correct position.

Power Connector	Switch Number	Description
	SW1	AC 24V_1 (24 VAC)
	SW2	GND (Ground)
	SW3	AC24V_2 (24 VAC)

5.6 Alarm I/O

The camera supports 4 digital alarm inputs and 2 digital alarm outputs. Make sure the alarm connections are properly wired before starting to configure alarm related settings. Refer to the pin definition table below for alarm system wiring.



1	ALARM_OUT_NO_1	7	ALARM_OUT_COM_2
2	ALARM_OUT_NC_1	8	GND
3	ALARM_OUT_COM_1	9	ALARM_IN_4
4	GND	10	ALARM_IN_3
5	ALARM_OUT_NO_2	11	ALARM_IN_2
6	ALARM_OUT_CN_2	12	ALARM_IN_1

5.7 RS-485 Connector Definition

Before connecting the RS-485 wires, refer to the illustrations below for definition of the RS-485 connector.

RS-485 Connector	Switch Number	Description
	SW1	R-
	SW2	GND
	SW3	R+
	SW4	T-
	SW5	T+

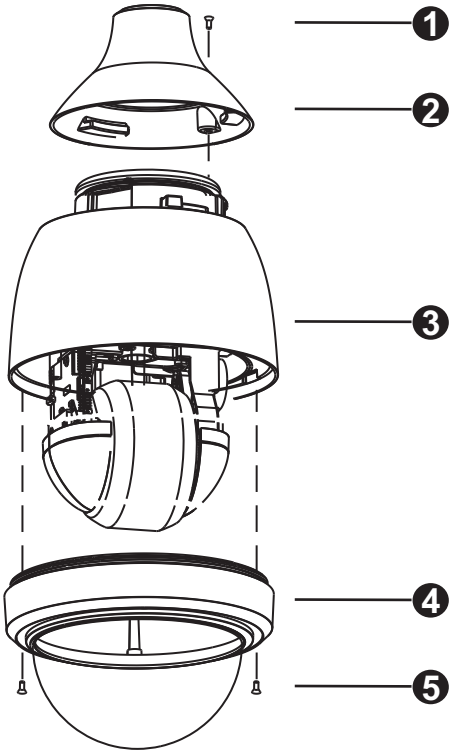
5.8 Prepare the Camera for Assembly

The camera is shipped with a PE cloth sheet covering the inside the dome cover and a lens cap attached to the lens. Follow the steps below to remove them.

1. Loosen the screws from the top of the Dome Cover.
2. Rotate and detach the Dome Cover from the Dome Camera Body.
3. Remove the PE cloth sheet and take off the lens cap.

5.9 Assemble the Indoor Camera

Refer to the following illustration and descriptions for the assembly of the Indoor Dome Camera.



1	M5x8L Mechanical Screw with Spring washer (1 piece)	4	Bubble
2	Indoor Adaptor	5	M3x23L Screw with Rubber (2 pieces)
3	Dome Camera Body		

Assembly Instructions

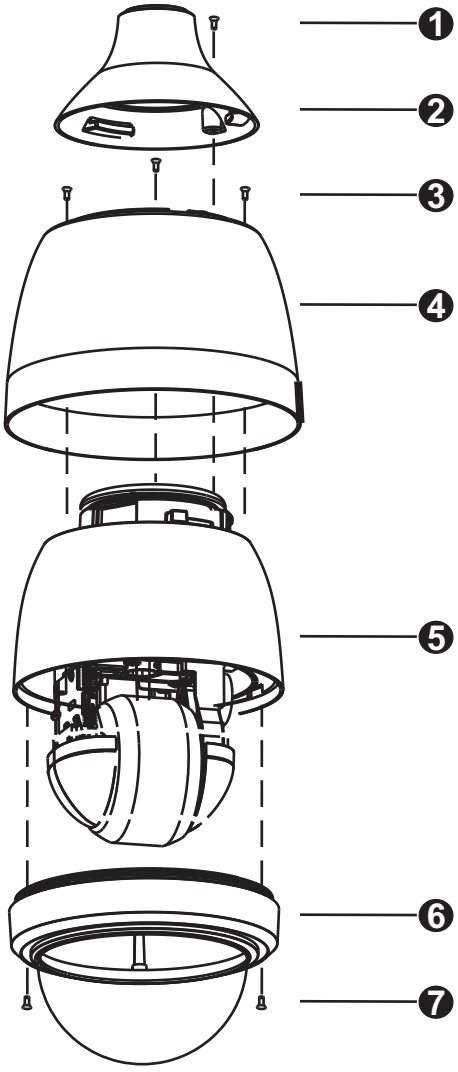
1. Attach the Bubble (4) to the Dome Camera Body (3) and fasten the M3x23L screws (5).
2. Attach the Indoor Adaptor (2) to the Camera Body (3) by turning clockwise and fasten the M5x8L screw (1) after all cables are connected to the camera back plate.

Notice!

If the Dome Camera will be attached to a wall or a pipe mount, ensure that the Indoor Adaptor is attached to the wall or pipe mount prior to attaching the Camera Dome Body.

5.10 Assemble the Outdoor Camera

Refer to the following illustration and descriptions for the assembly of the Outdoor Dome Camera.



1	M5x8L Mechanical Screw with Spring Washer (1 piece)	4	Sunshield
2	Outdoor Adaptor	5	Camera Body
3	M4x21L Mechanical Screw with Spring Washer (3 pieces)	6	Bubble
7	M3x23L Screws with Rubber (2 pieces)		

Assembly Instructions

1. Attach the Bubble (6) to the Camera Body (5) and fasten the two M3x23L screws (7).
2. Attach the Sunshield (4) to the Camera Body (5) by fastening the three (3) M4x21L screws.
3. Attach the Outdoor Adaptor (2) to the Camera Body (5) by turning clockwise and fasten the M5x8L screw (1) after all cables are connected to the camera back plate.

Notice!

If the Dome Camera will be attached to a wall or pipe mount, ensure that the Outdoor Adaptor is attached to the wall or pipe mount prior to attaching the Camera Dome Body.

5.11 Accessories

The AUTODOME 5000 Series PTZ Dome camera comes with the hardware and installation instructions necessary to mount the camera to a ceiling.
These following mounting accessories are available (and are supplied with separate mounting instructions):

Model Number	Description	Application
VEZ-A5-WL	Wall Mount	Indoor/outdoor vertical walls
VEZ-A5-PP	Pipe Mount	Indoor/outdoor high ceilings
VEZ-A5-IC	In-ceiling (Recessed) Mount	Indoor drop-ceiling
VDA-CMT-PTZDOME	Corner mount adapter	Indoor/outdoor corner (used with the VEZ-A5-WL Wall Mount)
VDA-POMT-PTZDOME	Pole mount adapter	Indoor/outdoor mast (used with the VEZ-A5-WL Wall Mount)

Caution!

Installation

The installation should be made by qualified installation personnel and conform to the National Electrical Code and applicable local codes.

Danger!

Servicing

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS, UNLESS YOU ARE QUALIFIED TO DO SO.

In USA and Canada, use Class 2 power supply unit (PSU) only.

Notice!

Use of Grounded Conduit

A grounded conduit is required in order to meet the EMC Regulation Requirements.

6 On-Screen Display (OSD) Menu

The On-screen Display Setup Menu provides access to all programmable settings for the camera.
Note: Although not always identified in the table below, most of the submenus have an Exit option as well.

6.1 Camera Setup Menu

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
White Balance	Auto		
	Indoor		
	Outdoor		
	ATW		
	Manual	R Gain	<000> to <127>
		B Gain	<000> to <127>
Video Level			<1> to <15>
Auto SensUp Max			<2x>, <4x>, <7.5x>, <15x>, <30x>, <60x>, <OFF>
Exposure Mode	Auto		
	Shutter	Shutter Speed	PAL: < 1/50> to <1/1000> sec. NTSC: <1/60> to <1/1000> sec.
		Iris Value	<Auto>
		Gain Control	<Auto>
	Iris	Shutter Speed	<Auto>
		Iris Value	<1> to <17>
		Gain Control	Auto
	Manual	Shutter Speed	PAL: < 1/50> to <1/1000> sec. NTSC: <1/60> to <1/1000> sec.
		Iris Value	<1> to <17>
		Gain Control	<1> to <16>
Backlight			ON, OFF
Sharpness			<01> to <16>
WDR Function			ON, OFF
Night Mode	Threshold		High, Mid, Low

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
	Night Mode		Auto, On, Off
Enhancement			Zoom, Stabilize, Off
DNR	2D N.R.		On, Off
	3D N.R.		On, Off
Restore Defaults			
Exit			

6.2 Lens Setup Menu

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
Auto Focus			Constant Manual Spot
Digital Zoom			<Off> <2x> to <12x>
Restore Defaults			
Exit			

6.3 PTZ Setup Menu

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
Autopan	Autopan		<1> to <4>
	Start Point		PT Move, To Save
	End Point		PT Move, To Save
	Direction		Right, Left
	Speed		<9°/sec>, <16°/sec>, <21°/sec>, <32°/sec>
	Dwell Time		<000> to <127>, Always
	Run Autopan		Enter
Tour	Tour		<1> to <8>
	Record Start		Enter
	Record Ent		Enter
	Run Tour		Enter
Preset Tour	P. Tour		<1> to <8>
	P. Tour Point		<1> to <64>
	Preset Pos.		<1> to <99>, End
	Speed		<1> to <15>
	Dwell Time		<0> to <127>, Always
	Run P. Tour		Enter
Preset	Preset Set		<1> to <99>
		Preset Title	
		Overwrite	
		Clear	
	Preset Run		<1> to <99>
Freeze			On, Off
Home Setting	Home Function		On, Off
	Select Mode		Preset, P. Tour, Autopan, Tour
	Preset Point		<1> to <99>
	Preset Tour		<1> to <8>
	Autopan		<1> to <4>
	Tour		<1> to <8>

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
	Return Time		<005> to <099> sec. or <2>, <3>, <4>, <5> min.
Schedule	Switch		On, Off
	Point		<1> to <32>
	Hour		<0> to <23>
	Minute		<0> to <59>
	Mode		None, Preset, P. Tour, Autopan, Tour, Night Mode, Tracking
	Mode Line	None	
		Preset	<1> to <99>
		Preset Tour	<1> to <8>
		Autopan	<1> to <4>
		Tour	<1> to <4>
		Night Mode	Auto, On
		Tracking	On, Off
	Schedule Reset		
Misc Function	Angle Adjuster	Min Angle	<-10> to <+10>
		Max Angle	<80> to <100>
	PT Position	PT Display	On, Off
		Set Pan Zero	Enter
	Speed By Zoom		On, Off
	AutoCali		On, Off
Restore Defaults			
Exit			

6.4 Display Setup Menu

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
ID Display			On, Off
Title Display	Title Display		On, Off
	Title Setting		<01> to <16>
Privacy Masking	Privacy Switch		On, Off
	Transparency		On, Off
	Color		Black, White, Red, Green, Blue, Cyan, Yellow, Magenta
	Set Masking		<1> to <20>
		Center	L/R
		Size: H Size	<000> to <080>
		Size: V Size	<000> to <060>
	Clear Masking		<01> to <20>
Time Setting	Time Display		On, Off
	Set Year		<2000> to <2099>
	Set Month		<01>to <12>
	Set Day		<01> to <31>
	Set Hour		<00> to <23>
	Set Minute		<00> to <59>
Motion Track	Motion Track		On, Off
	Motion Block		On, Off
	Bounding Box		On, Off
	Threshold		<1> to <255>
Restore Defaults			
Exit			

6.5 Alarm Setup Menu

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
Alarm Setting	Alarm Pin		<01> to <04>
	Alarm Switch		On, Off
	Alarm Type		<NO> (NORMAL OPEN), <NC> (NORMAL CLOSE)
	Alarm Action		Preset, Preset Tour, Autopan, Tour
	Preset Point		<01> to <99>
	P. Tour		<01> to <08>
	Autopan		<01> to <04>
	Tour		<01> to <08>
	Dwell Time		Always, <001> to <127> (Sec.)
	Alarm Priority		<01> to <04>
	Alarm Output		1, 2, 1+2, Off
Alarm Detect	Motion Detection		On, Off
	Block Mode		On, Off
	Frame Set		<01> to <04>
		Left Limit	L/R
		Top Limit	U/D
		H. Size	+/-
		V. Size	+/-
		Mode	Preset, P. Tour, Tour, Autopan
	Frame Disable		<01> to <04>
	Threshold		<001> to <255>
Restore Defaults			
Exit			

6.6 Language Setup Menu

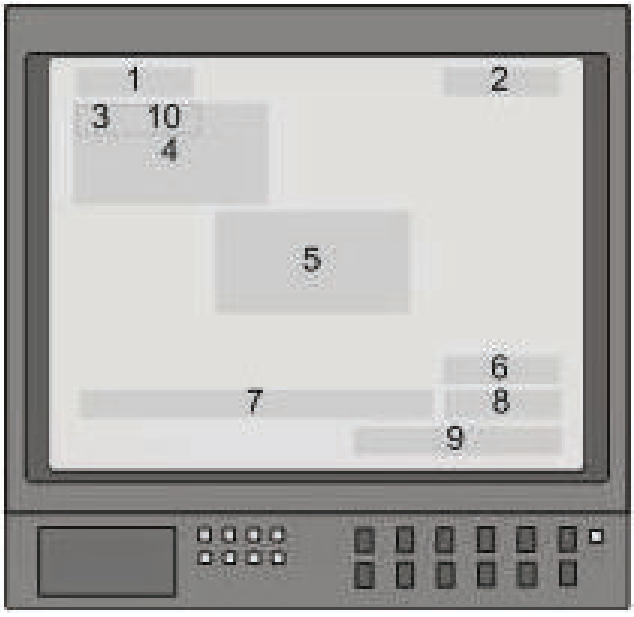
SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
EN DE FR ES NL IT PL PT RU ZH-ZN			
Exit			

6.7 Installer Menu

SUBMENU 1	SUBMENU 2	SUBMENU 3	VALUE
System Setup	System Reset		System Reset Initialize Camera
	Password		On, Off
	Image Inverse		On, Off
	Flip		Off, M.E., Image
	OSD Auto Close		Off, <10>, <15>, <20>, <25>, <30>, <60>, <90>, <120> sec.
Camera Setting	ID Setting	Setting Type	HW, OSD
		ID Number	<01> to <99>
		Title Setting	Enter
		Protocol	OSRD, Pelco P, Pelco D
		Baud Rate	<2400>, <4800>, <9600>
	ID Info.		ID Number, Title, Protocol, Baud Rate
Restore Defaults			
Exit			

6.8 Monitor Display

The information shown on the screen is classified in terms of displaying position, function, OSD display and description, as shown in the table below.



Position	Function	OSD Display	Description
1	Motion	MOTION	Alarm Detect Message
2	Alarm	ALARM 1	Alarm Message
3	Focus Modes & Backlight	A	Auto Focus Mode
		M	Manual Focus Mode
		X	Back Light Compensation OFF
		B	Back Light Compensation ON
4	Booting Message	XX...(Dome Type); ID: 001 (Default) DSCP/9600 (Default) INITIALIZING	Dome Type, ID Address, Protocol and Baud Rate
5	Error Message	PAN ERROR / TILT ERROR / CAM MODULE ERROR	System initializing error message
6	Zoom Ratio	x1	Present Zoom Ratio (Optical Zoom/Digital Zoom)
7	Title	Maximum 20 characters for each title. 16 sets of title are available.	
8	Camera ID	c	Camera ID

Position	Function	OSD Display	Description
9	Time	XXXX/XX/XX XX:XX	Year/Month/Day Hour: Minute
10	Position display	XX YYY/YY	**XX**: facing direction of PTZ (N, E, Z, W, NE, SE, SW, SN) **YYY/YY**: angle of PZT, 0 ~ 359 / 10 ~ –90

When the camera is starting up, the **OSD Start Page** will display information including ID number, protocol / baud rate, and camera initializing message. When any camera error occurs, the error message(s) will be shown on the screen.

6.9 Main Menu

When you use Pelco-D and Pelco-P protocol with your controller, you can access the MAIN MENU on your monitor by pressing the keys [95] + [Preset], or by pressing and holding the [Menu] key for 2 seconds.
When you use Bosch OSRD protocol with your controller, you can access the MAIN MENU on your monitor by pressing the keys [ON]+[46]+[Enter].

MAIN MENU
CAMERA SETUP
LENS SETUP
PTZ SETUP
DISPLAY SETUP
ALARM SETUP
LANGUAGE
INSTALLER MENU
RESTORE DEFAULTS
EXIT

Table 6.1: Main Menu

MAIN MENU Choices

Menu	Description
Exit	Exits the menu.
Camera Setup	Accesses adjustable camera settings such as: focus/zoom, white balance, exposure, day/night, sharpness and backlight, WDR/DNR.
Lens Setup	
PTZ Setup	Accesses adjustable pan/tilt/zoom (PTZ) settings such as: preset speed, autoflip, proportional pan/tilt, home preset, and calibration.
Display Setup	Accesses adjustable display settings such as: OSD, privacy zone masking, image setup, motion/face detection, and display language.
Alarm Setup	Accesses the alarm settings such as: inputs, outputs, and rules.
Language	
Installer Menu	
Restore Defaults	
SYSTEM SETUP	Accesses system information and actions such as: rebooting, resetting default settings, setting or resetting passwords.

6.9.1 Common Menus

Exit

Exit the menu.

Restore Defaults

The RESTORE DEFAULTS menu is for restoring the settings in any of the menus to the factory default values. Select <YES> to reset the parameters.

6.10 Camera Setup

The Camera Setup menu is as shown below:

CAMERA SETUP
WHITE BALANCE
VIDEO LEVEL
AUTO SENSUP MAX
EXPOSURE MODE
BACKLIGHT
SHARPNESS
WDR FUNCTION
NIGHT MODE
ENHANCEMENT
DNR
RESTORE DEFAULTS
EXIT

6.10.1 White Balance

A digital camera needs to find reference to color temperature, which is a way of measuring the quality of a light source, for calculating all the other colors. The unit for measuring this ratio is in degrees Kelvin (K). You can select one of the White Balance Control modes according to the condition. The following table shows the color temperature of some light sources.

Light Sources	**Color Temperature in Degrees Kelvin (K)**
Cloudy Sky	6,000 to 8,000
Noon Sun and Clear Sky	6,500
Household Lighting	2,500 to 3,000
75-watt Bulb	2,820
Candle Flame	1,200 to 1,500

Auto

In this mode, white balance works within its color temperature range. This mode computes the white balance value output using color information from the entire screen. It outputs the proper value using the color temperature radiating from a black subject based on a range of values from 3000K to 7500K.

Indoor

3200 K Base mode.

Outdoor

5800 K Base mode.

ATW

In Auto Tracking White Balance (ATW) mode, the camera takes out the signals in a screen in the range from 2000 K to 10,000 K.

Manual

In this mode, you can change the White Balance value manually. R Gain and B Gain are adjustable and range from <000> to <127>.

MANUAL	
R Gain	010
B Gain	019
Exit + Save	YES

6.10.2 Video Level

Adjust the video level from <1> to <15> (–10.5 dB to 10.5 dB). Select <OFF> to disable the function.

6.10.3 AutoSensUp Max

You can set up the limit for sensitivity when the shutter speed is selected as Auto SensUp. This function will determine how long the image sensor is exposed to light, so that you can see clear images in dark environments. The setting values are 2x, 4x, 7.5x, 15x, 30x, 60x and off. The camera will adjust the shutter speed automatically, based on the light condition of the environment. You will be able to see objects in darkness below 0.1 lux.

6.10.4 Exposure Mode

Exposure is the amount of light received by the image sensor and is determined by the width of lens diaphragm opening (iris adjustment), the amount of exposure by the sensor (shutter speed) and other exposure parameters. With this item, you can a preferred exposure mode.

Auto

In this mode, the camera's Bright Value, Shutter Speed, Iris Value and Gain Control are determined automatically to get consistent video output level.

Shutter

In this mode, shutter speed takes main control of exposure, and both the iris value and gain control function automatically in cooperation with shutter speed to achieve consistent exposure output. The shutter speed ranges from 1/10000 to 1/50 for PAL and 1/10000 to 1/60 for NTSC.

Iris

In this mode, the Iris function adjusts exposure in higher property. Shutter speed and gain control circuit function automatically in cooperating with Iris to get consistent exposure output. The iris value can be set from <1> to <17> (F1.6 to F28).

Manual

In this mode, you can adjust the following values for optimized video output:

– Shutter speed (1/10000 to 1/50 for PAL; 1/10000 to 1/60 for NTSC)
– Iris value <1> to <17> (F1.6 to F28)
– Gain control <1> to <16> (–3 dB to 28 dB)

6.10.5 Backlight

The backlight compensation function helps to improves image quality when the background illumination level is high. Select <ON> to activate the function. The center object will be brightened in contrast to the edge of the picture (where a backlight would be most likely located).

6.10.6 Sharpness

In this menu, you can adjust enhancement of the edges of objects in the picture. There are 16 levels of adjustment: <01> to <16>. <01> represents “no enhancement”. This function can help to make the image sharper to read texts.

6.10.7 WDR Function

The Wide Dynamic Range (WDR) function is especially effective in solving indoor and outdoor contrast issues to enhance better image quality and video display. It enables the camera to catch detailed data from the dark part (Indoor) without any saturation from the bright part (Outdoor).
Select <ON> to activate the WDR function. The camera will operate the WDR function automatically. Select <OFF> to deactivate.

6.10.8 Night Mode

With the IR cut filter, the camera can still catch clear images at night time or in low light conditions. During day time, the IR cut filter will be on to block the infrared light for clear image. During night time, the IR cut filter will be removed to catch infrared light, and the displayed images will become black and white.

Threshold

The Internal circuit will automatically decide the occasion to remove the IR cut filter according to the value of light condition calculated by the internal light algorithm. The options include <LOW>, <MID> and <HI>. <LOW> indicates a higher sensitivity and can improve reliability of lens so that it is easier to switch to Day mode and relatively difficult to change to Night mode. <HI> indicates that it is easier to switch to Night mode and difficult to change to Day mode.

Night Mode

Select <AUTO> to let the camera switch ON/OFF the IR cut filter automatically according to detection of light condition. Otherwise, select <ON> to remove the IR cut filter and the camera will be in Night mode. Select <OFF> to attach the IR cut filter and the camera will be in Day mode to disable the IR function.

6.10.9 Enhancement

With the Enhancement function, the "digital enhancement" will be implemented to improve the zoom performance, which can capture images that would otherwise be blurred due to vibration. The default setting is <ZOOM>, which gradually activates digital zoom when optical zoom is greater than 1x. However, the Image Enhancement feature is set to OFF due to DSP limitation.
When <STABILIZE> is selected, the Image Enhancement is activated. Under this mode, digital zoom is added and the image is stabilized.
If you select <OFF>, digital zoom and Image Enhancement are deactivated.

6.10.10 DNR

In this menu, you can select the parameters for Dynamic Noise Reduction (DNR): 2DNR or 3DNR.

With 2D / 3D Digital Noise Reduction (D.N.R.), the processor analyzes pixel by pixel and frame by frame to eliminate environmental noise signal so that the highest quality image can be produced even in low light conditions. In comparison with 2D D.N.R., 3D D.N.R. generates better de-noising effects.

6.11 Lens Setup

The Lens Setup menu is as shown below.

LENS SETUP
AUTO FOCUS
DIGITAL ZOOM
RESTORE DEFAULTS
EXIT

6.11.1 Auto Focus

The focus of the camera can be set in three different modes: Constant, Manual and Spot.

Constant

Select <CONSTANT> and the camera will adjust the focus automatically and continuously in any condition.

Manual

Select <MANUAL> to adjust the focus manually via the control keyboard.

Spot

When <SPOT> is selected, the camera will only activate Auto Focus after it stops movement. Once the camera is focused, Auto Focus is inactive until the camera moves again.

6.11.2 Digital Zoom

You can enable Digital Zoom from <2x> to <12x>. The Digital Zoom will be activated after the full Optical Zoom level is reached. The default setting is <OFF>.

Notice!

The difference between optical and digital zoom is that optical zoom uses the lens within the camera to draw the image closer via zoom in or out to achieve the desired effect. Optical zoom remains the same quality and full resolution of the zoomed image. On the other hand, Digital zoom takes a portion of an image and expands the partial image to the full size of the original image. Therefore, the image quality will be reduced.

6.12 PTZ Setup

The PTZ Setup menu is as shown below:

PTZ SETUP
AUTOPAN
TOUR
PRESET TOUR
PRESET
FREEZE

PTZ SETUP
HOME SETTING
SCHEDULE
MISC FUNCTION
RESTORE DEFAULTS
EXIT

6.12.1 Autopan

Autopan means the motion of scanning an area horizontally so that the camera can catch the horizontal view. The parameters are as follows.

AUTOPAN	
Autopan	01
Start Point	PT Move
End Point	PT Move
Direction	Right
Speed	9° sec.
Dwell Time	001
Run Autopan	Enter
Exit	YES

Autopan

There are four sets of Autopan Lines built into the camera. You can select a line to execute by pressing LEFT/RIGHT direction keys. In addition, you can command the camera to do endless panning by setting the start point the same as the end point.

Start Point

Follow the description below to set the start position of the AUTOPAN path.

1. Move the cursor to <START POINT> and press <**CAMERA MENU**> while the item, <PT MOVE>, is flashing. Then the item will turn <TO SAVE> automatically.
2. Point the camera lens to a desired position and press <**CAMERA MENU**> to save the position as the start point. The cursor will move to <END POINT> automatically. Be sure to set the end point to complete Auto Pan setting.

Notice!

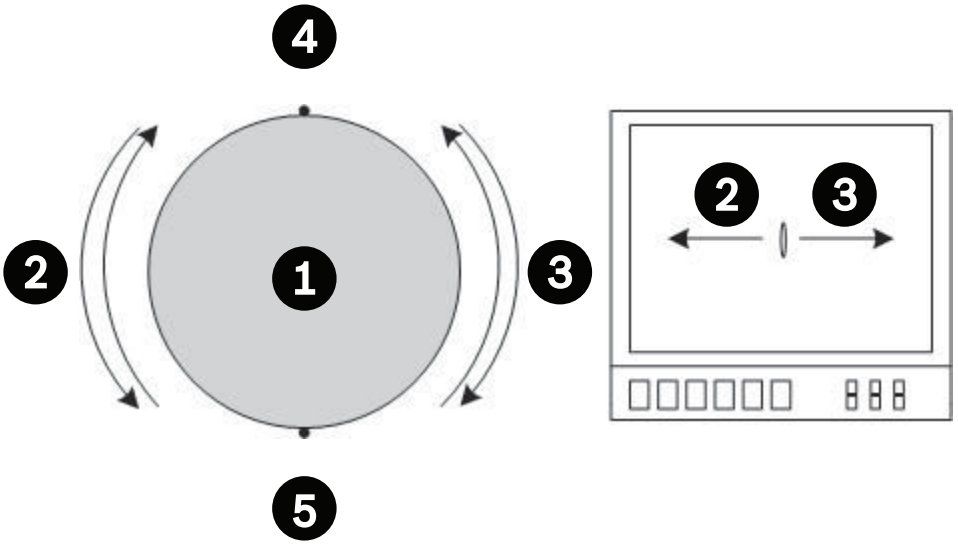
The tilt and zoom values of the start point will be recorded and **fixed** for the selected Autopan line.

End Point

You can set the end point after the start point is defined. Pan the camera lens to another position and press <**CAMERA MENU**> to save the position as the end point.

Direction

You can set the AUTOPAN direction of the camera. The camera will start to pan clockwise from the start point to the end point if <RIGHT> is selected here, and then return to the start point. The camera will start to pan anti-clockwise from the start point to the end point if the selection is <LEFT>. Refer to the diagram below.



1	Camera
2	LEFT (counterclockwise) selection
3	RIGHT (clockwise) selection
4	Start point
5	End point

Speed

You can define the rotation speed during Autopan. The speed is adjustable from 9°/sec., 16°/sec, 21°/sec. or 32°/sec.

Dwell Time

The dwell time is the duration of time that the camera remain at an Autopan line, and the range is from <000> to <127> seconds. The camera proceeds to the next Autopan line when the dwell time expires. If the setting is <000>, the camera remains at this Preset Tour Point for less than 1 second and then shifts to the next point.

Run Autopan

Select this item to run the Autopan function after all Autopan settings are complete. Press the <**CAMERA MENU**> key to run the Autopan path.

Notice!

You can execute the Autopan function through a control keyboard. Refer to the control keyboard's quick guide for further information.

6.12.2 Tour

Tour is a route formed with manual operation, through adjusting pan, tilt position and zoom parameters, which can be stored and recalled to execute repeatedly.

TOUR	
Tour	01
Record Start	Enter
Record End	Enter

TOUR	
Run Tour	Enter
Exit	YES

Tour

Up to eight sets of Tour routes can be created for one camera. Use the LEFT/RIGHT direction keys to select a set first and then follow the steps below to start recording the Tour route.

Record Start

Follow the description below to record the TOUR route.

1. Rotate the camera to a desired view area (for some protocols, you may need to do it before entering the OSD), and press <**CAMERA MENU**> to build the tour path using the joystick on the control device. The percentage of the memory buffer used will be displayed on the screen.
2. Pan, tilt and zoom the camera to form a path.

Notice!

Beware of the memory size when building a Tour route. Once the buffer percentage reaches 100%, recording stops.

Record End

The cursor moves to RECORD END while building the Tour route. When the setting is completed, press <**CAMERA MENU**> to save the route.

Run Tour

Press the <**CAMERA MENU**> key (ENTER) to run the defined Tour path after tour setting is complete.

Notice!

You can execute the Tour function through a control keyboard. Refer to the control keyboard's quick guide for further information.

6.12.3 Preset Tour

This function executes pre-positioning of the pan, tilt, zoom and focus features in a certain preset tour for a camera. Before setting this function, you must pre-define at least two preset points.

PRESET TOUR	
P. Tour	01
P. Tour Point	01
Preset Pos.	01
Speed	01
Dwell Time	000 Sec.
Run P. Tour	Enter
Exit	YES

Preset Tour

There are eight sets of preset tour built in the camera. Use the LEFT/RIGHT direction keys to select a set first and then set its preset tour points.

Preset Tour Point
Up to 64 points can be setup for each Preset Tour. The Preset Tour Points represent order of the preset points that the camera will run automatically. The following setup items, including PRESET POSITION, SPEED and DWELL TIME influence how the camera runs through each preset tour point.

Preset Position
Assign a specific preset position to the selected Preset Tour Point . Options include <1> to <99> and <END>. END is used for the Preset Tour Point following the last Preset Tour Point when the amount of preset tour points (the previous menu item) is less than 64.

Notice!
If you will not use all 64 points, set the point following the last Preset Tour Point as <END> so that the preset tour can work properly. For example, if you intend to set a Preset Tour with 5 preset tour points, you must set the PRESET POSITION of Preset Tour Point 06 as <END>.

Warning!
To set more than one Preset Tour Point or Preset Position, you must exit the Preset Tour menu and access it again to set the next Point or Position.

Speed
You can set the pan/tilt speed of the camera from one Preset Tour Point to the next, and the range of setup speed is from 1 to 15. Within the range, PAN speed varies from 10 to 360 (degree/sec.), and TILT speed varies from 8 to 360 (degree/sec.).

Dwell Time
The Dwell Time is the duration of time that the camera will stay at a Preset Tour Point, and the range is from <000> to <127> seconds. The camera will go to the next preset tour point when the Dwell Time expires. If the setting is <000>, the camera will stay at this Preset Tour Point for less than 1 second and then shift to the next point.
Currently, the default dwell time is 0 seconds. You must change the numeral to set any other duration of dwell time.

Run Preset Tour
You can command the camera to run the selected Preset Tour manually. Press the <**CAMERA MENU**> key to execute a preset tour.

Notice!
You can execute the Preset Tour function through a control keyboard. Refer to the control keyboard's quick guide for further information.

6.12.4 Preset

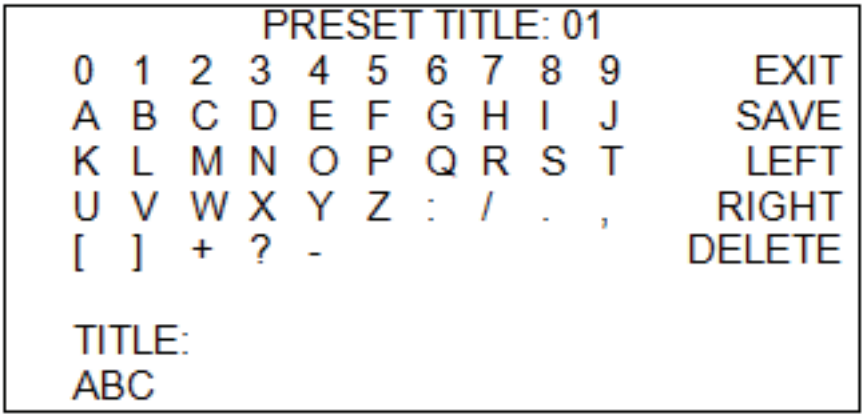
You can define preset points in this menu.

PRESET	
Preset Set	01
Preset Run	01
Exit	YES

Preset Set

A total of 99 preset points can be set. Follow the steps below.

1. Press the LEFT/RIGHT direction keys to select a number (01 represents preset point 1, 02 represents preset point 2, etc.).
2. Press the <**CAMERA MENU**> key and then move the camera to a targeted shooting area/ point.
3. Press the <**CAMERA MENU**> key again to save the defined preset point.
4. Once the preset point is saved, access the <**CAMERA MENU**> again to choose one of the following options: <**PRESET TITLE**> (name the preset point), <**OVERWRITE**> (overwrite the preset number with the current point), <**CLEAR**> (clear the saved preset point) and <**EXIT**> (exit without change).
5. Select <PRESET TITLE> to name the preset point, up to 20 characters. The camera displays a keyboard similar to the illustration below.



   Choose a character with the direction keys and press the <**CAMERA MENU**> key to choose the character.
   To delete characters in a title, move the cursor to the <**LEFT**> or the <**RIGHT**> and press <**CAMERA MENU**> to select a character in the entry field. Then move the cursor to <**DELETE**> and press <**CAMERA MENU**> to delete the selected character.
   Move the cursor to <SAVE> and press <**CAMERA MENU**> to accept and save the title.
6. To overwrite a previous position, move to the new position and choose <**OVERWRITE**> from the submenu.
7. To clear the saved preset point, enter the submenu and select <**CLEAR**> (clears both preset point).

Preset Run

Press the <**CAMERA MENU**> key, and the camera will go to the selected point. To run other defined preset points, press the LEFT/RIGHT direction keys, select the preset point that you want to go, and press the <**CAMERA MENU**> key again.

Notice!

You can set preset points through a control keyboard. Refer to the control keyboard's quick guide for further information.

6.12.5 Freeze

Freeze function allows you to hold the image while the camera is moving between preset positions such as in PRESET and PRESET TOUR modes. For example, when the camera is manipulated to run from point A to point B, if the Freeze function is activated, the first view that you would see is point A. Then the next view would directly change to point B without displaying the moving path.

6.12.6 Home Setting

You can set an operation mode to ensure constant monitoring. If the camera idles for a period of time, the selected function will be activated automatically. That is the HOME function. The HOME function helps to provide constant and accurate monitoring, which prevents the camera from idling or missing events.

HOME SETTING	
Home Function	Off
Select Mode	Preset
Preset Point	01
Return Time	005 Sec
Go	Enter
Exit	YES

Home Function

You can enable or disable the HOME function. Use the LEFT/RIGHT direction keys to change the setting.

Select Mode

Select one of the modes that the camera should execute when the HOME function is enabled and the RETURN TIME expires. The options include <PRESET>, <PRESET TOUR>, <AUTOPAN> and <TOUR>. Use the LEFT/RIGHT direction keys to change the setting, and the menu items below will change in cooperating with the selection.

Preset Point

Select a preset point the dome should go to after the Return Time function, which will be mentioned later, is activated. The preset point(s) should be set prior either in the PRESET setup menu or through the keyboard.

Preset Tour

Select a preset tour line that the camera should execute after the Return Time function is activated. The preset tour line(s) should be defined prior either in the PRESET TOUR setup menu or through the keyboard.

Autopan

Select an Auto Pan line that the camera should execute after the Return Time function is activated. The Auto Pan line(s) should be defined prior either in the AUTOPAN setup menu or through the keyboard.

Tour

Select a tour line that the camera should execute after the Return Time function is activated. The tour line(s) should be defined prior either in the TOUR setup menu or through the keyboard.

Return Time
The camera starts to count down RETURN TIME when the dome idles, and then execute the SELECT MODE function when the return time is up. The RETURN TIME ranges from 5 to 99 seconds or 2, 3, 4, or 5 minutes.

Go
If the HOME function is enabled, select this parameter to execute the HOME.

6.12.7 Schedule

You can use the schedule function to program a preset point or function (Preset Tour / Auto Pan / Tour) to be executed automatically at a specific time.

SCHEDULE	
Switch	Off
Point	01
Hour	00
Minute	00
Mode	None
No Action	None
Schedule Reset	Yes
Exit	YES

Switch
Select <ON> to enable or <OFF> to disable the schedule function.

Point
You can arrange 32 sets of schedule points. Each set of schedule point can be assigned one kind of schedule modes.

Hour / Minute
These items are for setting up the time to execute each schedule point.

Mode
This is for setting the schedule function of the selected schedule point. The options are listed as follows. For options other than <NONE>, further setting of <MODE LINE> is required.

- **None**
  No action will be executed for the schedule point.
- **Preset**
  You can select <PRESET > as an action carried out in a schedule point.
- **Preset Tour**
  You can select <PRESET TOUR> as an action carried out in a schedule point.
- **Autopan**
  You can select <AUTOPAN LINE> as an action carried out in a schedule point.
- **Tour**
  You can select <TOUR LINE> as an action carried out in a schedule point.
- **Night Mode**
  If < NIGHT MODE > is selected, the Night Mode function is activated for a schedule point.
- **Tracking**
  You can select <MOTION TRACK> as an action carried out in a schedule point.

Mode Line
After you select a schedule function for MODE, you can specify the MODE LINE of the selected schedule function. According to different schedule functions, options for MODE LINE will be different.

Schedule Reset
You can reset the whole schedule setting with this item.

6.12.8 Misc. Function

You can set up some miscellaneous functions here.

MISC FUNCTION	
Angle Adjuster	Enter
PT Position	Enter
Speed By Zoom	Off
Auto Cali.	Off
Exit	YES

Angle Adjuster
You can adjust the range of tilt motion by defining the angles between which the camera tilts. The minimum range is from –10° to 10°. The maximum range is from 80° to 100°. The default tilt angle is 90°.

PT Position
PT Position can setup the display of the Pan/Tilt position of the camera on the screen. Refer to section *Monitor Display, page 33* for the displaying location.

– **PT Display**
  Set this item to <ON> to enable the display of the pan/tilt position on the screen. The display format will be “XX YYY/ YY”.
– **Set Pan Zero**
  By using <SET PAN ZERO> function, you can set the North as coordinate zero.
  The display will show eight different directions including N, E, S, W, NE, SE, SW and SN, depending on the closest direction that the camera is facing. The PAN range is from 0° to 359°, and the TILT range is from 10° to –90°. Once the TILT degree is lower than –90°, the PAN degree will automatically be added 180°.

Speed By Zoom
If this item is set to <ON>, the pan/tilt speed will be adjusted automatically by internal algorithm when zooming. The larger zoom ratio leads to the lower rotating speed.

Auto Cali. (Auto Calibration)
Each camera has one horizontal point and one vertical infrared rays check point. During installation or maintenance, the camera’s position may be moved. Therefore, the relative distance between the original set point and the check point will be changed. If the Auto Calibration function is enabled, the camera will automatically detect the matter and reset the horizontal point back to the original position.

6.13 Display Setup

The Display Setup menu is as shown below:

DISPLAY SETUP
ID DISPLAY
TITLE DISPLAY
PRIVACY MASKING
TIME SETTING
MOTION TRACK
RESTORE DEFAULTS
EXIT

6.13.1 ID Display

You can decide whether the camera's ID will be displayed on the screen for the purpose of identifying the camera.
Select <ON> to enable the display of the ID address of the camera on the screen. Alternatively, select <OFF> to hide the ID address of the camera.

6.13.2 Title Display

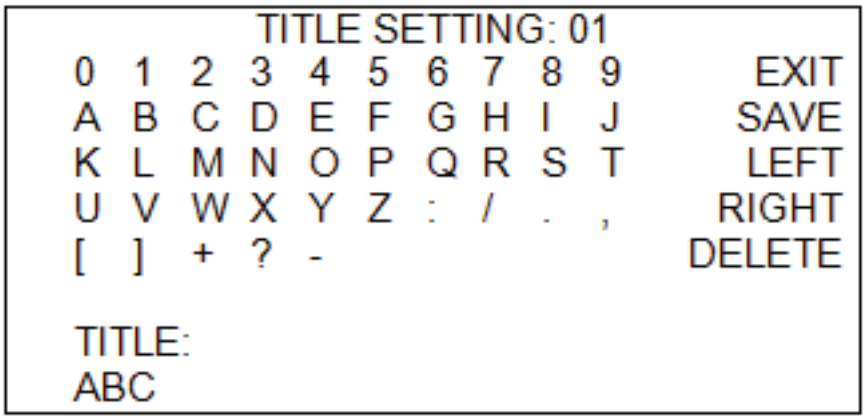
You can choose whether to display the predefined titles of the selected positions on the screen.

TITLE DISPLAY	
Title Display	Off
Title Setting	01
Exit	YES

Title Display
Select <ON> to display the titles when the camera is shooting at the titled positions. Select <OFF> to hide the titles, even they have been predefined.

Title Setting
Up to 16 scene titles can be set with maximum 20 characters for each title. Follow the steps below to set a camera title.

1. Operate the camera to a position where you want to set a title for it.
2. Access the OSD and go to <**DISPLAY SETUP**> → <**TITLE DISPLAY**> →<**TITLE SETTING**>.
3. Select a number to represent the position.
4. Press the <**CAMERA MENU**> key on the keyboard to access the editing page.



5. Choose a character with direction keys and then press the <**CAMERA MENU**> key to input. For example: <**A**> <**CAMERA MENU**>, <**B**> <**CAMERA MENU**>, <**C**> <**CAMERA MENU**>. The title is **ABC**.
6. To delete input characters, move the cursor to <LEFT> or <RIGHT> and press <**CAMERA MENU**> to select a character in the entry field. Then move the cursor to <DELETE> and press <**CAMERA MENU**> to delete the selected character.
7. When the setting is completed, move the cursor to <SAVE> and press <**CAMERA MENU**> to save.

6.13.3 Privacy Masking

The Privacy Masking function aims to avoid any intrusive monitoring. You can adjust the camera position by the joystick, and adjust the masking size and area via the direction keys. When setting a mask, it is best to set it at least *twice as large* (height and width) as the masked object. The camera will assume the center of the selected view as a starting point, and the joystick will be locked as you enter the <SET MASKING> menu.

Notice!
The Image Flip function and the Image Inverse function will be disabled automatically while the Privacy Masking function is enabled. Refer to the section *System Setup, page 57*.

The available area for setting a privacy mask is restricted within tilt angle 70°. Maximum 20 masks can be displayed in one scene. When Motion Detection function is enabled, only 16 masks zones can be displayed.

PRIVACY MASKING	
Privacy Switch	Off
Transparency	Off
Color	Black
Set Masking	01
Clear Masking	01
Exit	YES

Privacy Switch
You can enable or disable the Privacy Masking function through this item. Set this item to <ON> before configuring mask zones.

Transparency
The privacy masks can be set as transparent. Select <ON> to display transparent masks.

Color
Colors of privacy masks can be set via this item. The available colors are black, white, red, green, blue, cyan, yellow and magenta.

Set Masking
Use the control device to move the camera to the area where you want to set a mask. Press <**CAMERA MENU**> to enter the SET MASK menu. The camera will memorize the current position as a privacy masking position.

SET MASKING	
Center	Enter
Size	Enter
Exit + Save	YES

– **Center**
The original center of a mask zone is the center of a screen. It is possible to move a mask zone to other positions by adjusting with the LEFT/RIGHT keys. The camera will pan to the right or to the corresponding direction according to users' control.
– **Size**
You can adjust the horizontal / vertical size of a privacy mask through this item. Setting the H size and V size to 0 will delete the selected mask.

Clear Masking
You can delete a preset masking zone with this item. Select a target masking zone and press <**CAMERA MENU**> to confirm the deletion.

6.13.4 Time Setting

The Time Setting function is used to set the time-related parameters of the camera. The menu is as follows.

TIME SETTING	
Time Display	Off
Set Year	2012
Set Month	09
Set Day	01
Set Hour	00
Set Minute	00
Exit + Save	YES

Time Display
Select <ON> to enable the display of time information on the screen, or select <OFF> to disable.

Set Year / Month / Day
These items are for setting up the system date.

Set Hour / Minute
These items are for setting up the system time.

6.13.5 Motion Track

Motion Track consists of algorithms that detect movements or changes to see whether the movements or changes mean a possible threat is about to occur or is occurring. These algorithms work by examining each pixel of the video and putting together all the pixel changes. If many pixels are changing in one area and that area is moving in a direction, the software considers this to be a motion. Depending on the policies and alerts you have setup, you will be notified of this motion or other actions can be automatically taken by the software, such as Motion Tracking that follows the motion until it is no longer detected.

Motion Track	
Motion Track	On
Motion Block	Off
Bounding Box	Off
Threshold	16
Exit	YES

Motion Track

Switch <ON> or <OFF> the Video Analytics function to start or stop tracking motions.

Motion Block

You can set Motion Block as <ON> or <OFF> when the Motion Track is activated. When Motion Block is enabled, the detected motion images will be highlighted by a bunch of white motion blocks.

Bounding Box

You can set Bounding Box as <ON> or <OFF> when the Motion Track is activated. When the Bounding Box is enabled, the detected motion images will be highlighted by a big purple bounding box. The size of the bounding box is depending on the biggest range of the moving object.

Threshold

The Threshold range is adjustable from <1> to <255>. The smaller the value, the more sensitive the video analytics detection is. For example, 1 has the highest sensitivity and 255 has the lowest sensitivity.

6.14 Alarm Setup

The Alarm Setup menu is as shown below:

ALARM SETUP
ALARM SETTING
ALARM DETECT
RESTORE DEFAULTS
EXIT

6.14.1 Alarm Setting

The camera provides connection to four sets of alarm input devices and two sets of alarm output devices (N.O. or N.C.). With this function, the camera can work with the alarm system to catch event videos. For information about wiring, refer to the Installation section and/or to qualified service personnel. Adjustable alarm parameters are as listed below:

ALARM SETTING	
Alarm Pin	01
Alarm Switch	OFF
Alarm Type	NO
Alarm Action	Preset
Preset Point	01
Dwell Time	003 Sec
Alarm Priority	1
Alarm Output	1+2
Exit	Yes

Alarm Pin

The camera supports up to four sets of alarm inputs. Select an alarm input pin number to setup its related parameters. For pin definitions of the alarm connector, refer to the section Alarm Type.

Notice!

If two or more alarm pins are triggered at the same time and their alarm priority numbers are the same, then the alarm pin with the smaller number will have higher priority to be handled. For example, if Alarm-1 and Alarm-3 are triggered simultaneously, only Alarm-1 will actually be handled.

Alarm Switch

Use this option to enable (ON) or disable (OFF) the selected alarm pin.

Alarm Type

There are two different alarm types: Normally Open and Normally Closed, which are illustrated below. Select an alarm type that corresponds with the alarm application.

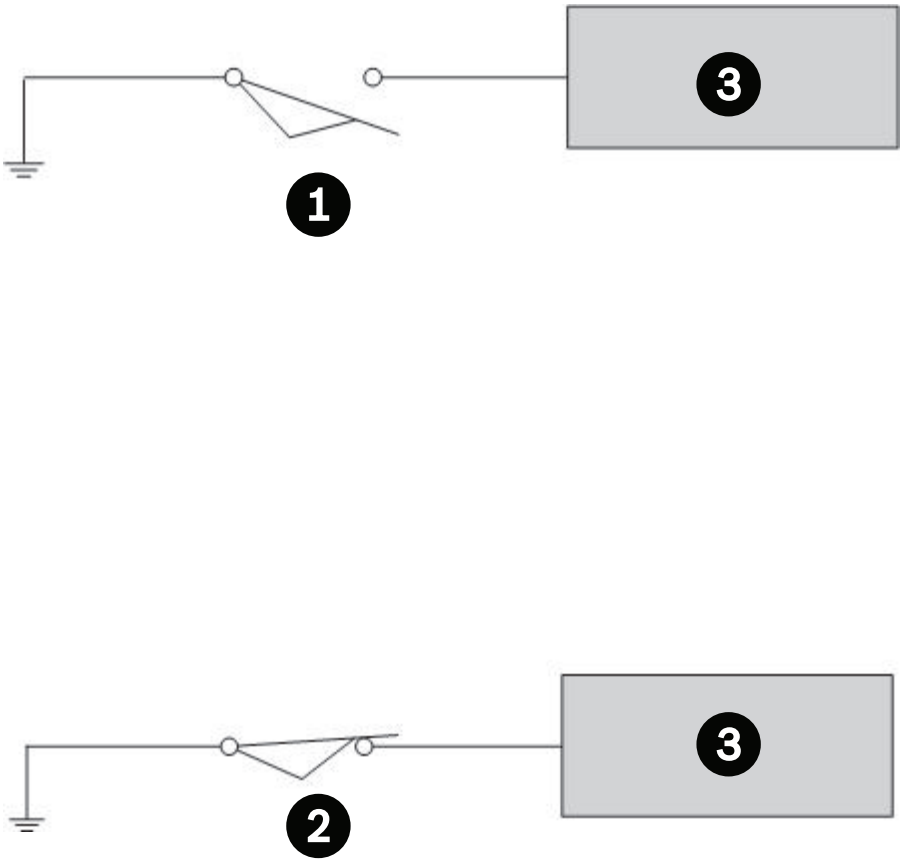


Figure 6.1: Alarm Type

1	Normally Open
2	Normally Closed
3	Alarm

Alarm Action

The alarm actions include PRESET, PRESET TOUR, AUTOPAN and TOUR functions. Select one of these modes so that the action will be executed when the selected alarm pin is triggered. The items listed below will change in accordance with the selected alarm action. Additionally, when an alarm is triggered, there will be a flash warning notice “ALARM” displayed at the upper right corner of the screen.

Notice!

When the alarm condition (dwell time setting: 1 to 127 seconds / ALWAYS) is released, the camera will go back to the previous status before alarm was triggered.

Preset Point

Select a preset point where the camera should go when the alarm pin is triggered. The preset point(s) should be set prior either in the PRESET setup menu or through the keyboard.

Preset Tour

Select a preset tour line that the camera should execute when the alarm pin is triggered. The preset tour line(s) should be defined prior either in the PRESET TOUR setup menu or through the keyboard.

Autopan
Select an Auto Pan line that the camera should execute when the alarm pin is triggered. The Auto Pan line(s) should be defined prior either in the AUTOPAN setup menu or through the keyboard.

Tour
Select a tour line that the camera should execute when the alarm pin is triggered. The tour line(s) should be defined prior either in the TOUR setup menu or through the keyboard.

Dwell Time
The dwell time is the duration for executing the alarm action. If the PRESET mode is selected, the camera will go to the selected Preset position and stay there for a user-defined period of time (1 ~ 127 seconds / Always) when the alarm pin is triggered, until the alarm condition is released or you rotate the joystick to change the status of the camera.
If any other modes (PRESET TOUR / AUTOPAN / TOUR) is selected, the camera will keep executing the selected mode (DWELL TIME: ALWAYS) until the alarm condition is released or you rotate the joystick to change the status of the camera.

Notice!
The dwell time is only adjustable when **PRESET** is selected as the alarm action. When the dwell time is up, the camera will go back to its triggered position and recheck alarm pin status.

Alarm Priority
Set alarm priority from <1> to <4> for each alarm pin. If two or more alarms are triggered at the same time, smaller alarm priority number will have higher priority to be handled. The default alarm priority is <1>.

Alarm Output
There are two available alarm outputs for the camera. You can set <1>, <2>, <1+2> or <OFF> to activate the alarm output devices when the pin alarm is triggered.

6.14.2 Alarm Detect

When the Alarm Detect function is activated, the camera will detect movement within a predefined monitoring area and will send alarm signals automatically when any motion is detected. There will be a flash warning notice “MOTION” displayed at the upper left corner of the screen.

ALARM DETECT	
Motion Detection	Off
Block Mode	Off
Frame Set	01
Frame Disable	01
Threshold	014
Exit	Yes

Motion Detection
This item is used to enable (ON) or disable (OFF) the Motion Detection function. The Motion Detection function allows the camera to monitor for suspicious motion and trigger an alarm when motion volume in the detection area exceeds the specified sensitivity threshold value.

Block Mode
Select <ON> to enable highlighting of detected motion in the monitoring area. Select <OFF> to disable highlighting of detected motion.

Frame Set
You can define specific areas as motion detection target zones. Refer to the instructions as follows to configure parameters for each motion detection zone so-called “Frame.” A total of four frames can be set. Select the number of frame using the LEFT/RIGHT keys, and press the <**CAMERA MENU**> key to enter the FRAME SET submenu.

FRAME SET	
Left Limit	L/R
Top Limit	U/D
H Size	+/-
V Size	+/-
Mode	Preset
Preset	001
Dwell Time	003 Sec
Exit	Yes

– **Left Limit**
Move the frame to the left/right using the LEFT/RIGHT keys.
– **Top Limit**
Shift the frame up/down using the LEFT/RIGHT keys.
– **H / V Size**
Adjust the frame size via changing the Horizontal / Vertical size value using the LEFT/RIGHT keys.
– **Mode**
Assign a trigger action for the motion detection frame. Options include PRESET, PRESET TOUR, AUTOPAN and TOUR. When motion is detected in the frame, the camera will execute the selected trigger action.
– **Mode Line**
After you select a trigger action for MODE, you can specify the MODE LINE of the selected trigger action. According to different trigger actions, options for MODE LINE will be different.
– **Dwell Time**
The Dwell Time is the duration for executing the selected trigger action. If the PRESET mode is selected, the camera will go to the selected Preset position and stay there for a user-defined period of time (1 to 127 seconds / Always) when any motion is detected, until the alarm condition is released or you rotate the joystick to change the status of the camera.
If any other mode (PRESET TOUR / AUTOPAN / TOUR) is selected, the camera will keep executing the selected mode (DWELL TIME: ALWAYS) until the alarm condition is released or you rotate the joystick to change the status of the camera.

Notice!
The dwell time is only adjustable when **PRESET** is selected as the alarm action. When the dwell time is up, the camera will go back to its triggered position and recheck alarm pin status.

Frame Disable
Select a frame to be canceled, and press <**CAMERA MENU**>. The selected frame will then be removed.

Threshold
The Threshold range is adjustable from <1> to <255>. The smaller the value, the more sensitive the video analytics detection is. For example, 1 has the highest sensitivity and 255 has the lowest sensitivity.

6.15 Language

Select the language in which you want to read the OSD.
EN - English
DE - German
FR - French
ES - Spanish
NL - Dutch
IT - Italian
PL - Polish
PT - Portuguese
RU - Russian
ZH – Simplified Chinese

6.16 Installer Setup

The Installer Setup menu is as shown below.

INSTALLER SETUP
SYSTEM SETUP
CAMERA ID SETTING
EXIT

6.16.1 System Setup

System Setup is where installers can set up system-related parameters, which are as follows.

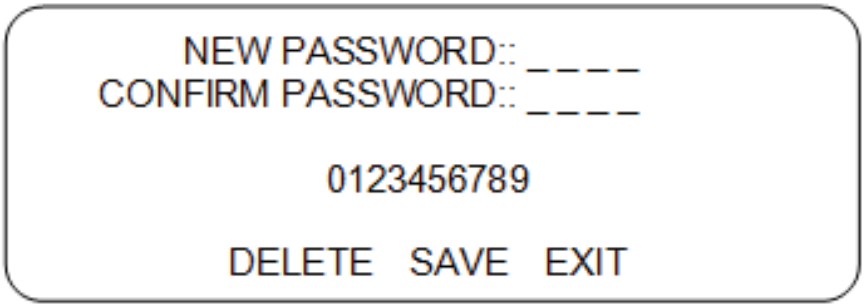
SYSTEM SETUP	
System Reset	Enter
Password	Off
Image Inverse	Off
Flip	Enter
OSD Auto Close	20 Sec
Exit	YES

System Reset
Two types of system reset can be implemented under this submenu.

– **System Reset**
  Select this function for system reboot. Press <**CAMERA MENU**> and system reboot will be initiated.
– **Initialize Camera**
  This function allows users to restore the camera to its factory default state. Press <**CAMERA MENU**> and the camera will start to retrieve the factory default setting.

Password

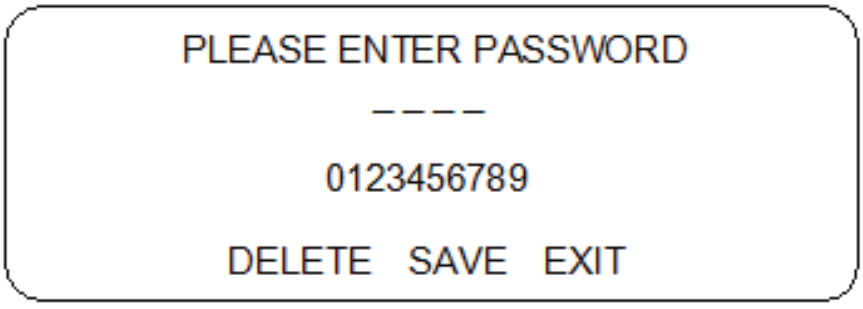
In this menu, you can set the password for OSD control. Once the function is activated, you must enter the password every time that you access the OSD menu. The Password setting menu is shown as below.



The password setting procedure is as the following.

1. Choose a number with direction keys and then press the <**CAMERA MENU**> key to input the number. For example: <**0**> <**CAMERA MENU**>, <**1**> <**CAMERA MENU**>, <**2**> <**CAMERA MENU**>, <**3**> <**CAMERA MENU**>. The password will be **0123**.
2. In the second line, enter the same password again to confirm the setting.
3. Move the cursor to <SAVE> and press <**CAMERA MENU**> to save the setting.
4. Move the cursor to <EXIT> and press <**CAMERA MENU**> to exit the password setting page.

If OSD Password function is already enabled, the password request message will be displayed when you press the <**CAMERA MENU**> key to enter the OSD menu. Please enter the password to access the OSD main menu.



Notice!

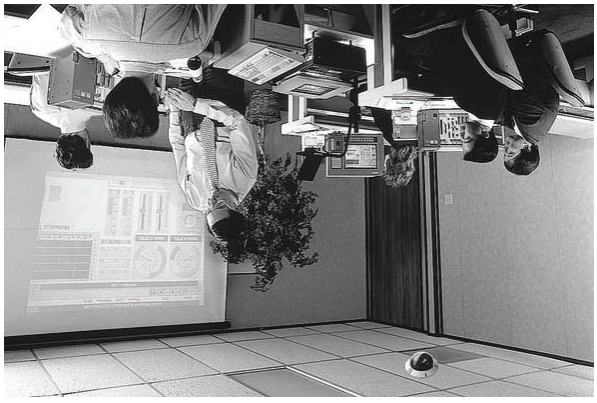
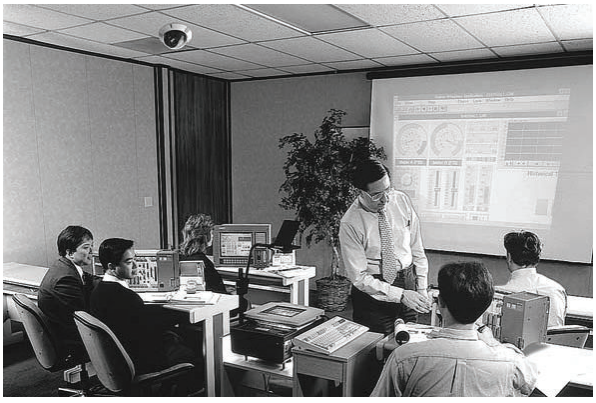
If it is the first time activating the Password Function, please enter the Master Password (9527) to setup a new password.

Image Inverse

Activates the image inverse function.

You can select <ON> to make the displayed image inversed vertically and horizontally (see the figures shown below). Occasions to employ the function include conferences, demonstration, testing, etc. The default setting is <OFF>.

Application: You can see the displayed images, as shown below, when a dome is placed on the desk top in a conference, for instance.

Image Inverse OFF	Image Inverse ON
	

Notice!
When the Image Inverse function is enabled, the Privacy Masking function will be disabled automatically. Refer to the section Image Inverse Off.

Flip
This function allows the camera to track an object continuously when it passes through the camera's view. Options in this menu are IMAGE (Digital flip) or M.E. (Mechanical flip).

– **Image**
IMAGE represents digital IMAGE FLIP, which enables you to keep tracking objects seamlessly. In this mode, almost no delay occurs in comparing with that in the M.E. mode.

Notice!
When the Image Flip function is enabled, the Privacy Masking function will be disabled automatically, and "MASK WILL BE SET OFF" will be shown on the screen. Refer to the section Image Inverse Off.

– **M.E. (Mechanical Flip)**
M.E. is a standard mechanical operation. As the camera tilts to the maximum angle, it will pan 180° and continue tilting to keep tracking objects.

Notice!
The Flip setting is manual-controlled only. If a Preset or a point for other function (for example, a Preset Tour) is set in the position that can only be reached through the FLIP motion, the position will become unreachable when the Flip function is disabled.

– **Off**
Select this item to disable the flip function.

Notice!
To make the camera tilt between a specific range (–10° to 100°), refer to the section Angle Adjuster to set the angle range of tilt movement. Otherwise, the camera will tilt 90° as the default setting.

OSD Auto Close
Specifies the duration that the OSD menu appears on the screen, in seconds: 10, 15, 20, 25, 30, 60, 90, and 120.
To keep the OSD menu on the screen without auto exit, set this option to <OFF>.

6.16.2 Camera Setting

Camera ID Setup is where installers can set up camera ID-related parameters, which are as follows.

CAMERA SETUP	
ID Setting	
ID Info.	
Restore Defaults	
Exit	YES

ID Setting
Sets up the camera ID.

ID SETTING	
Setting Type	OSD
ID Number.	001
Title Setting	Enter
Protocol	OSRD
Baud Rate	9600 BPS
Exit	YES

- **Setting Type**
  Select the setting type for the camera ID. Options are: OSD (for setting the ID using the OSD),
  HW (for setting the ID using the DIP switch).
  Set the OSD as the first priority. If installers set the camera ID by using the DIP switch, then they must still enter the OSD menu to select “HW” (Hardware setting) before the DIP switch will work. If installers do not select “HW” (Hardware setting), then the camera uses the OSD setting automatically.
- **ID Number**
  Select the ID number. The default is 001.
- **Title Setting**
  Set up the title for the camera.
- **Protocol**
  Select OSRD, Pelco D, Pelco P.
- **Baud Rate**

Select the correct baud rate: 2400, 4800, and 9600

ID Info.

Displays the information about the camera ID, ID number, title, protocol, and baud rate.

ID INFO.	
ID Number	001
Title	ABC
Protocol	OSRD
Baud Rate	9600BPS
Exit	YES

7 Operation

The following tables identify common Aux commands (hot keys) for Bosch protocol and for Pelco protocol.

Hot Keys, Bosch Protocol

Preset Command / Function	Key	Description	Example
Autopan without limits - to pan 360°	On/Off	Autopan - to pan 360º	ON+1+Enter
To start Autopan between limits	On/Off	To start AutoPan between limits	ON+2+Enter
AutoPan Menu	On	Enters AutoPan Menu	ON+5+Enter
Preset Tour 1	On/Off	To activate or deactivate Preset Tour 1	ON+8+Enter
Preset Tour 2	On/Off	To activate or deactivate Preset Tour 2	ON+7+Enter
Backlight Comp.	On/Off	Backlight Compensation	ON+20+Enter
WB Setup	On/Off	Enters White Balance menu	ON+35+Enter
Camera Default Restored	On	Restores Settings for the camera block only, not for all PTZ or other unit functions	ON+40+Enter
Main Menu	On	Enters Main Setup Menu	ON+46+Enter
Tour 1	On/Off	Playback A (Continuous)	ON+50+Enter
Tour 1	On/Off	Playback A (Single)	ON+51+Enter
Tour 2	On/Off	Playback B (Continuous)	ON+52+Enter
Tour 2	On/Off	Playback B (Single)	ON+53+Enter
Alarm Menu	On	Enters Alarm Menu	ON+64+Enter
Alarm Action stopped	Off	Acknowledge Alarms and Deactivate Alarms	OFF+65+Enter
SW Ver. Displayed	On	Displays SW version no.	ON+66+Enter
Digital Zoom	On/Off	Changes to Digital Zoom mode	ON+80+Enter
Privacy Masking	On/Off	Enters Privacy Masking menu	ON+87+Enter
Tour 1	On/Off	Record Tour A: Enters Tour Setup menu to set up Tour 1	ON+100+Enter
Tour 2	On/Off	Record Tour B: Enters Tour Setup menu to set up Tour 2	ON+101+Enter
Preset 1~99	Set	To set Preset 1~99	Set +1~99+Enter
Preset 1~99	Shot	To run Preset 1~99	Shot +1~99+Enter
Run Calibration	Set	Set-recalibrate Home Position	Set+110+Enter

Preset Command / Function	Key	Description	Example
Restores all settings	Set	Restores all settings to original defaults and clears all user-programmed settings	Set+899+Enter
Autopan left limit (= manual preset)	Set	Save AutoPan left limit	Set+101+Enter
Autopan right limit (= manual preset)	Set	Save AutoPan right limit	Set+102+Enter

Hot Keys, Pelco Protocol

Preset	Key	Preset Number	Operation	Example
Preset	Preset	1-59,101-140	No. + Preset	1+ Preset
Preset shortcut saving	*Preset	1-59,101-140	*	*
Scan Setup	Preset	60	No. + Preset	60+Preset
Scan Setup	Preset / Scan	61-68	No. + Preset	61+Preset 1+Scan
Preset Tour Setup	Preset	70	No. + Preset	70+Preset
Run Preset Tour #1	Preset / Tour	71	No. + Preset	71+Preset
Run Preset Tour #2	Preset / Tour	72	No. + Preset	72+Preset
Run Preset Tour #3	Preset / Tour	73	No. + Preset	73+Preset
Run Preset Tour #4	Preset / Tour	74	No. + Preset	74+Preset
Run Preset Tour #5	Preset / Tour	75	No. + Preset	75+Preset
Run Preset Tour #6	Preset / Tour	76	No. + Preset	76+Preset
Run Preset Tour #7	Preset / Tour	77	No. + Preset	77+Preset
Run Preset Tour #8	Preset / Tour	78	No. + Preset	78+Preset
Tour Setup	Preset	80	No. + Preset	80+Preset
Run Tour #1	Preset / Pattern	81	No. + Preset	81+Preset 1+ Pattern
Run Tour #2	Preset / Pattern	82	No. + Preset	82+Preset
Run Tour #3	Preset / Pattern	83	No. + Preset	83+Preset
Run Tour #4	Preset / Pattern	84	No. + Preset	84+Preset
Run Tour #5	Preset / Pattern	85	No. + Preset	85+Preset
Run Tour #6	Preset / Pattern	86	No. + Preset	86+Preset
Run Tour #7	Preset / Pattern	87	No. + Preset	87+Preset
Run Tour #8	Preset / Pattern	88	No. + Preset	88+Preset
ENT Key	Preset	90	No. + Preset	90+Preset
Run HOME	Preset	91	No. + Preset	91+Preset
Set Autopan 1 left limit	Preset	92	No. + Preset	92+Preset
Set Autopan 1 Right limit	Preset	93	No. + Preset	93+Preset
ENT2 Key	Preset	94	No. + Preset	94+Preset
MENU Key / Enter OSD menu	Preset / **Menu	95	No. + Preset	95+Preset
Deactivate running Autopan	Preset	96	No. + Preset	96+Preset

Preset	Key	Preset Number	Operation	Example
D.Zoom (toggle)	Preset	97	No. + Preset	97+Preset
Run Autopan #1	Preset	99	No. + Preset	99+Preset

8 Troubleshooting

If problems occur, check the installation of the camera with the instructions in this manual. Refer to this guide for further information.

Problem	Solution
No video on screen.	- Verify that the power is connected to all components in the system. - Verify that the power switch is ON. - Verify the status of cables or the connection of cables.
Poor video quality.	- Check the power supply voltage (normal 24 VAC) directly at the camera. - Check the camera settings. - Check the video quality directly at the camera with a service monitor. - Check the quality and length of video cables, and possible EMC interference. - Check the quality of connectors and potential moisture/corrosion. - If the lens or the dome window is dirty, clean it with a clean cloth.
Camera is not working properly (including wrong position of camera).	- Power-cycle the camera and power supply, or reset the camera using the configuration menu [Main > System > Reboot]. - Check the connection of the power cable and the status of the camera. - Initialize the camera [Main > System > Initialize]. - Check the power rating of the power supply. - Measure the voltage at the camera (since there could be a drop in voltage due cable length). The power consumption increases when the camera is moving (especially at high speed) and when the heater is on. The voltage at the camera should always be 24 VAC (+/- 10%).
The communication between controller and camera (via RS-485 cable) is not working properly.	- Check that the RS-485 cable is connected correctly. - Check the ID/Protocol/Baud rate/Termination setting.
I want to set up the camera ID via the dip switch at the back of the camera, but the dip switch is not enabled.	The value in the Setting Type menu (Installer Setup > Camera ID Setup > Setting Type) must be HW (Hardware), or the dip switch will not be enabled.
The surface of the dome case is hot.	- Check the voltage level of the dome camera and the status of the camera. - Check that the camera is connected to the proper power.
The image on the screen flickers.	- Check to see if the camera faces directly into the sun or a fluorescent lamp. If so, reposition the dome. - Check for flickers on the screen.

Problem	Solution
The camera has 20 Privacy Masking zones, but I can only set 16.	Motion Detection function is enabled. Only 16 zones can be displayed when this function is enabled.
I set Image Flip function, but it is disabled.	Privacy Masking function is enabled. When this function is enabled, Image Flip function is disabled. Both functions cannot be enabled at the same time.
I set Image Inverse function, but it is disabled.	Privacy Masking function is enabled. When this function is enabled, Image Inverse function is disabled. Both functions cannot be enabled at the same time.
I want to use Privacy Masking, but it is disabled.	Check that Image Flip function or Image Inverse Function is enabled. When either of these functions is enabled, Privacy Masking is disabled automatically.
I cannot set a new password.	Try entering the Master Password (9527) before setting a new password.
I cannot record a tour.	Check the size of the memory buffer. Once the buffer reaches 100%, the camera will not record a tour. Clear the buffer to regain memory space.
Auto SensUp Max mode does not function.	Check that Enhancement function is enabled. When this function is enabled, AutoSenUp Max does not function.
I set WDR function, but it is disabled.	Check that Enhancement function is enabled. When this function is enabled, WDR function is disabled.
Digital Zoom capability is limited.	Check that Enhancement function is enabled. When this function is enabled, Digital Zoom capability is limited.
I set multiple alarms, but I see only one triggered.	Check the priority numbers of the alarms. If two or more alarm pins with the same priority number are triggered simultaneously, the system gives higher priority to the alarm with the smaller number, and handles only that alarm.

9 Technical data

Camera Dimensions

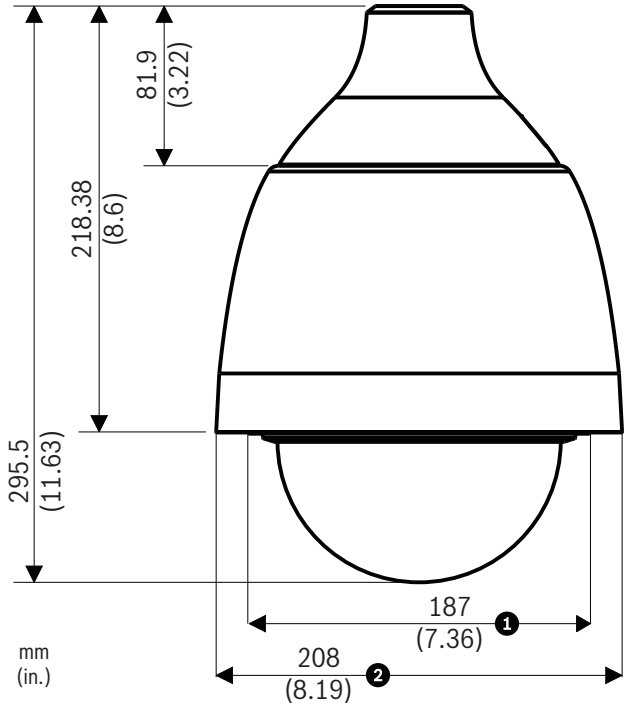


Figure 9.1: AUTODOME 5000 Indoor/Outdoor Dimensions

1	Diameter without sunshield (indoor models)
2	Diameter with sunshield (outdoor models)

10 Appendices

The following tables list the DIP Switch settings for camera IDs.

ID Number	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8	Sw-9	SW-10
00	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
01	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
02	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
03	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
04	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
05	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
06	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
07	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
08	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
09	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF

ID Number	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8	Sw-9	SW-10
31	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF

ID Number	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8	Sw-9	SW-10
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
71	ON	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
75	ON	ON	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
77	ON	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
78	OFF	ON	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
79	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
83	ON	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
86	OFF	ON	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
87	ON	ON	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
89	ON	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
90	OFF	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
92	OFF	OFF	ON	ON	ON	OFF	ON	OFF	OFF	OFF
93	ON	OFF	ON	ON	ON	OFF	ON	OFF	OFF	OFF
94	OFF	ON	ON	ON	ON	OFF	ON	OFF	OFF	OFF
95	ON	ON	ON	ON	ON	OFF	ON	OFF	OFF	OFF
96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF

ID Number	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8	Sw-9	SW-10
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF

Table 10.1: Camera ID Setup – DIP Switch Settings

Protocol Number	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6
00	OFF	OFF	OFF	OFF	OFF	OFF
01	ON	OFF	OFF	OFF	OFF	OFF
02	OFF	ON	OFF	OFF	OFF	OFF
04	OFF	OFF	ON	OFF	OFF	OFF
05	ON	OFF	ON	OFF	OFF	OFF
06	OFF	ON	ON	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF

Table 10.2: Protocol Setup – DIP Switch Settings

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